



IMPLEMENTATION OF BAY CITY WWTP IPP FLOW PROPORTIONAL SAMPLING REQUIREMENTS

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September 18, 2014

DEQ Letter February 10 2010 : “The IPP had not yet been revised to comply with the Streamlining changes to 40 CFR 403; this needs to be done. “

MDEQ Fact sheet for 403 streamlining required changes

10. Require periodic compliance reports to comply with sampling requirements, require Control Authority to specify the number of grab samples necessary in periodic and noncategorical SIU reports, and require noncategorical SIUs to report all monitoring results [§ 403.12(g)(3), (4), (6)]

What follow-up actions are required? POTW legal authorities and program procedures must be revised as necessary to require SIUs to follow the sampling requirements in § 403.12 for periodic compliance reports and to require non-categorical SIUs to report all monitoring results. Many POTW pretreatment programs already include these requirements.

§ 403.12 (g) (3) 40 CFR Ch. I (7–1–06 Edition)

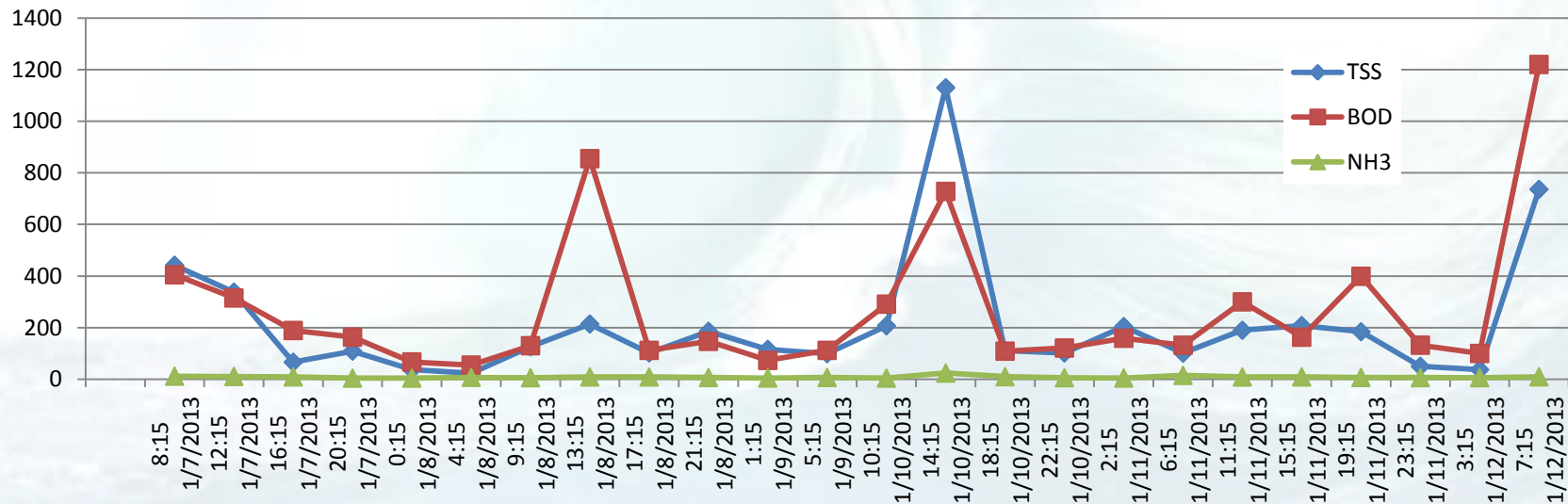
For all other pollutants, 24-hour composite samples must be obtained through flow-proportional composite sampling techniques, unless time-proportional composite sampling or grab sampling is authorized by the Control Authority. Where time-proportional composite sampling or grab sampling is authorized by the Control Authority, the samples must be representative of the Discharge and the decision to allow the alternative sampling must be documented in the Industrial User file for that facility or facilities.

Dow Chemical Groundwater Remediation Site

- **Failed to Demonstrate Time-Proportional Sample was going to produce a Representative Sample**
 - **Evaluated flow too variable based on environmental conditions**
 - **Looked at wet chemistry also extremely variable**
- **Had to implement Flow Proportional Sampling**
- **Already Had installed flow meter**
 - CFR 40 States multiple grab samples collected during a 24-hour period may be composited prior to the analysis as follows: For cyanide, total phenols, and sulfides the samples may be composited in the laboratory or in the field; for volatile organics and oil & grease the samples may be composited in the laboratory. Composite samples for other parameters unaffected by the compositing procedures as documented in approved EPA methodologies may be authorized by the Control Authority, as appropriate.
- **Flow proportioned sample obtained by aliquotting grab samples in accordance with flow for the 24 hour sampling period SOP included in file**

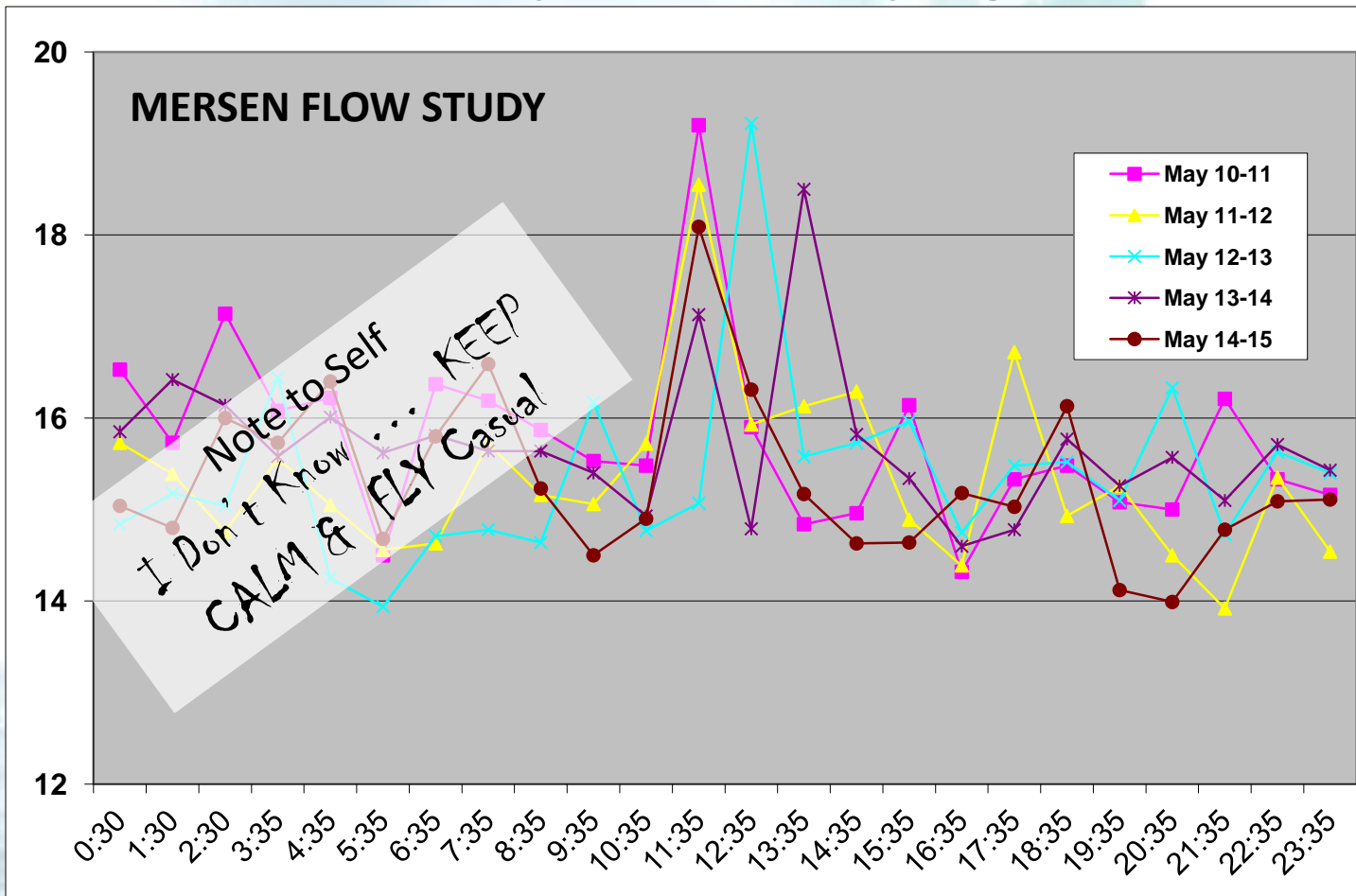
Hospital

- Failed to Demonstrate Time-Proportional Sample was going to produce a Representative Sample
 - Using 24 bottle sampler evaluated wet chemistry every hour for 6 days: extremely variable 4 samples / day with an hour shift every day
- Had to implement Flow Proportional Sampling
- Turbulent flow at sampling point created the inability to do flow study
- Installing flow meter in the parking lot meter would significantly disrupt hospital emergency room operations
- Hired contract lab with portable flow meter attachment to meet flow proportional sampling requirements



MERSEN (the Steep Learning Curve)

- Hired Company to do Flow Study
- Sent me raw flow data which I graphed
- Time or Flow Proportional Sampling ???



Determining the “Line”

Variable (Flow Proportioned) & Consistent (Time Proportioned)

- EPA guidance : Compliance with Environmental Standards Cannot Be Arbitrary and/or Capricious
- Demonstration is Required but what kind of statistic can be used?



Determining Flow Proportional Sampling



- **TECHNICAL MEMORANDUM**

From: Bruce Tiffany, P.E.

To: Industrial Users of King County CA Sanitary Sewer System

Date: May 28, 2014

Re: Flow-Proportioned Sampling

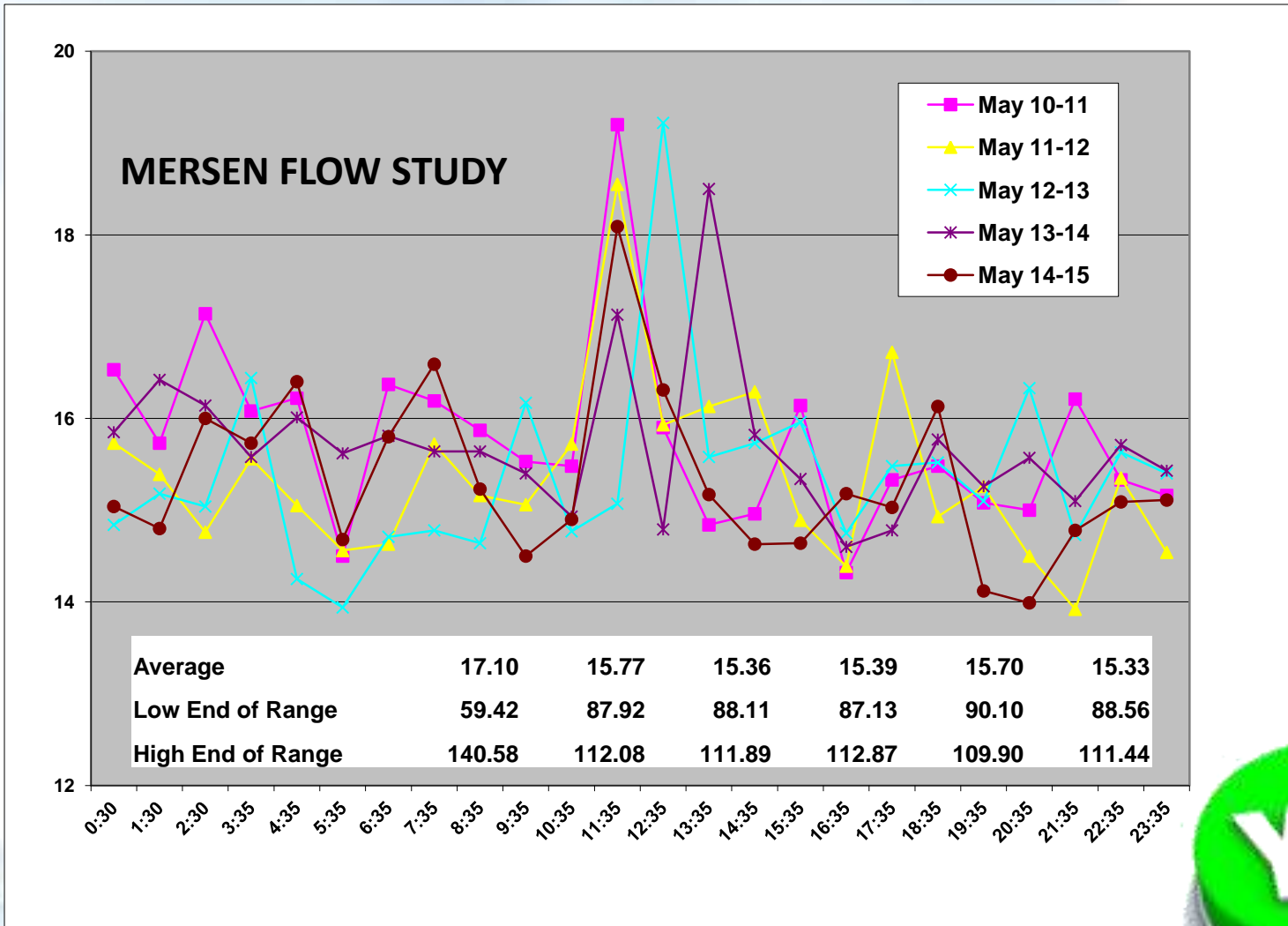
Determining the “Line”

Low Variability in Discharge - Constant Flow Rate or Consistent Wastewater

Time-proportioned sampling is acceptable if either the flow rate data or the wastewater chemistry data for each parameter of interest are representative of the industrial wastewater discharge and the statistics meet the following criteria:

- **Low End of Range:** Average – 2 standard deviations is equal to or greater than 50% of the average ($0.5Q_{avg}$).
- **High End of Range:** Average + 2 standard deviations is equal to or less than 150% of the average ($1.5Q_{avg}$).
- **Datapoints:** A minimum of 20 datapoints are needed in order for the statistics to be evaluated.

MERSEN (the Final Statistical Answer)



DECIDE:

YES

NO



Time Proportional Sampling Approved

The Take Home

Epifunnies

by Blazek

